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A STUDY IN THE PRINCIPLES OF LINGUISTIC
CHANGE ¹

The science of Philology or Linguistics has hitherto been, on the main, historically descriptive. The collection of a large mass of facts and materials in exhaustive detail, is the chief service which it has rendered to modern knowledge. This work had to be done before the vital interpretation of the phenonema of language could be attempted. However, Philology itself was not able to find this interpretation and to proceed from an accumulation of data and facts to the explanation of the vital processes of which they are the product. While the principle of organic evolution was fully recognized and applied in the scientific research of the last half-century, a thorough-going application of it to language was not in an adequate way accomplished by linguistic scholars. The non-performance of this most important task may appear excusable, in view of the comparatively recent discovery and perfection of the method by which alone it could be properly performed. The nature and development of language came to be rightly understood only when Wilhelm Wundt began to include language in his experimental psychophysical research. It would be unfair, therefore, and certainly unprofitable, to dwell at much length on the inability of philologists to deal satisfactorily with this side of their discipline. However, to review briefly the main errors of the earlier theories will enable us to form a better estimate of Wundt's work, and will serve to prepare the way for the particular aspect presented in this study.

What chiefly concerns us here is the question of the causes of linguistic change. The hypothesis by which Philology sought to explain sound change rests on the assumption that there are laws of sound, and that phonetic change proceeds in a regular way by laws inherent in sounds as such. The misconception, implied in this view, is just this, that a sound as such is thought to possess an immanent tendency to undergo change, independently of the fortunes which it has or may

¹ This study is largely based upon vols. I and II of W. Wundt's *Völkerpsychologie*, dealing with language. To this the reader is referred.

have as a sound element of a word. The sound is thus taken out of those relations with other sounds in which it always occurs; as a matter of fact it has no independent existence at all. To Wundt this notion appears to partake of something like mysticism. At any rate, the unexceptionable phonetic law is the grammarian's or the phonetician's abstraction and construction. The fact that sound-change is dependent on the context of sound, that it is the contact and association of a sound with other sounds which causes its modifications, had not become clearly evident to the philological mind. Furthermore, the inability to think in terms of evolution and of psycho-physical processes, is seen in the untenable general theories by which philologists tried to account for the variation and mutation in language, generally. To quote from Wundt: "Here we find the assumption still widely current in linguistic science, that every general change in sound or meaning, is to be referred to one, individual deviation. While numerous other variations were lost, *one*, falling happily in with an existing tendency, became usual. This coöperative tendency itself is generally held to be totally independent of the individual origin of the change. It is sometimes ascribed to the interest in the novelty of the thing, but especially to the imitative instinct in human nature. Now, in as much as the original individual departures, especially in the domain of phonetic change, are supposed to be of purely accidental character, and owing to their absolutely incalculable nature, defy every attempt at ascertaining their conditions, this theory of the transition from the occasional to usual phenomena, manifestly evades the question of causation altogether. Or, instead of answering it, it points to the sociological law of imitation, according to which no individual can do anything striking or contrary to custom, without his associates succumbing to the suggestive influence of such an action. Under this theory of imitation, chance is literally made the creator of all social phenomena, and consequently of society itself. Now, to be sure, chance plays an accessory part in many cases, but it hardly ever assumes the principal rôle in the deeper and more incisive general changes of communal life and its products. On the contrary, wherever we are able to investigate

the conditions of such changes, though the last and decisive cause be unknown, they are regularly found to be such as could not have started from an individual, or a limited number of individuals, but must depend upon influences which affect all members of a community, or, at least, the majority of them."

The same failure to see the development of language as a vital thing, genetically, gave rise to theories of a teleological character. Thus, when it was assumed that there is an instinctive tendency toward ease, a desire to facilitate speech by following the line of least resistance, also a more or less conscious tendency to simplify, accompanied by an endeavor to make language uniform. Now, it is true that linguistic development has made articulation and expression simpler and easier, and it is really by this fact alone, that we are justified in regarding the history of language under the form of progressive evolutionary development. It is sentimental fogysm and a curious pessimism to speak of "laziness" and "slovenliness" as having caused a "decay" of words. What is really economy of effort and convenient systemization was, until quite recently, looked upon as a loss and corruption of the fancied greater beauty and virility of the older language. From the tendency toward uniformity, it was thought, arose the use of so-called "false analogy" which led to a decay of forms and a blurring of distinctions. This reprehensible drift toward ease and degeneration was, however, fortunately offset by a sort of instinctive purpose to preserve significant distinctions of sound and meaning. One is at a loss to understand why the idea of decadence should have commended itself so insistently to philological speculation. It seems paradoxical to think, that the function of speech is in any sense decadent, when the race is, intellectually, rapidly progressing and in no way decaying.

It is sufficiently clear from this cursory review that such theories are constructed upon wrong foundations. There are the two fatal errors, involving self-contradiction and wholly incompatible with the idea of growth: that language is consciously made, and again that it is a product of accident.

We can now pass on to an outline summary of Wundt's

views touching change in language. He begins by a very sane caution: "The question, how a nation in the course of centuries can change the phonology of a word beyond recognition cannot possibly be answered in a thoroughly satisfactory and exhaustive manner. To do this we should have to account for the nature and extent of all those changes which have occurred through inner and outward circumstances in the entire intellectual and physical nature of the speaking community. We can only say that such changes take place irresistibly, receiving little attention when they first begin to appear."

There are, according to Wundt, three principal causes of change, working more slowly or rapidly at different times: (1) The influence of external or natural (physical) conditions. (2) The mixture of races and nations. (3) The effects of culture and civilization. These factors may co-operate. The first is naturally very slow. Race mixture is connected with incisive historical events. It is to the influence of culture that we must look for the causes of the steady and slow permutations, which are always and everywhere going on, even when external conditions may not seem to change. Of these changes, language is, perhaps, the most subtle manifestation.

At this point, a fundamental principle of evolution must be introduced, for which we are indebted to biological research. It is based upon the observation that through the gradual accumulation of slight changes, great sudden mutations are prepared. Tendencies that were for a long time more or less latent are apt to be liberated by sudden new influences, so that new varieties arise with surprising rapidity. This law of mutation teaches us to regard a long period of apparent stagnation as an interval of rest and incubation, naturally and necessarily preceding greater advances. Now, psychically, a significant advance in culture produces a great mobility of ideas and emotions; there is a new wealth and greater variety of thought, and such tension and stimulation of mental life, that greater rapidity and ease of the combinative mental processes is bound to follow. It is hardly necessary to insist, at much length, on this point; it is a self-evident

fact. Now, it is quite certain that at all periods of history, marked by a pronounced cultural advance, language, too, enters into a new phase of development. So the high culture of the nobility in the twelfth century throughout Central Europe, the German Reformation, the Elizabethan period, the renewal of all intellectual and artistic life a hundred years ago in Germany, are epochs of language as well. At every cultural mutation, the language reshapes itself to meet the need of new and better expression, and the result is always greater flexibility, conciseness and vivacity. Wundt says: "On general principles it is not improbable that the rate of speech must keep a fairly even pace with the higher rate of psychological reactions caused among other things by growing culture." Lamprecht's interpretation of historical development, which rests upon the recognition of great psychological differences between the periods of history, places strong emphasis on the much higher nervous sensitiveness of the modern period, especially. We are, therefore, fully justified in concluding that the greater vivacity of thought, and the greater ease of our psychological adjustments, have caused the tempo of speech to become more rapid. This influence of the rate of speech Wundt pronounces "one of the most incisive factors in change, although it has received but little attention from philologists hitherto."

In the psychology of the individual, cerebration and the motor apparatus are so closely connected that the speed of articulation is in exact ratio with the force of stimulation. Slow, halting speech means a slow working of the brain; ready utterance is rapid, unimpeded thinking. Intelligent and imaginative persons are not only, as a rule, fluent speakers, but they are also very apt to have high vocal pitch; for it seems that a faster rate of speech generally produces and requires a higher tone, due to the quicker vibration of the vocal chords and to higher overtones. Strong sound-stress and word accent, too, naturally raise the pitch. Wundt mentions the well-known fact, that not only do we play the masters of classical music faster today, but the orchestral instruments are also keyed to a perceptibly higher pitch than a hundred

years ago, and one might add that rapid parts are naturally assigned to the high instruments.

The purpose of this study in psycho-philology is to show that this acceleration in the psychological and mental processes, leading to more rapid articulation, can be set down as the strongest and most fundamental cause of linguistic change. To recognize it as a motive force, must logically imply acknowledging it as the principal psychological ground of change. When we compare modern English with the language of Malory and these again with Old English it is clear at once that the sum and substance of change in word-forms and in the manner of expression is a reduction and shortening. If this is due to the faster rate of speech, the question is, how does acceleration of tempo produce the effect? Wundt shows that it works mainly through sound-contact. The cogent proof of this theory is furnished simply enough by experimental reproduction of the whole process, i. e., most of the effects of sound-contact will occur at once when we accelerate articulation. We will in this way get assimilations of sound both regressive and progressive, which are the chief phenomena of phonetic change. "This evidence is all the more valuable as it extends over all known civilized languages and over the most various periods of linguistic and cultural development." Wundt gives the following examples: When Latin *supmus* passes into *summus*, *sedla*=*sella*; *factus*=*fatto*; *fluctus*=*fiotto*; *habte*=*hatte*; *entfinden*=*empfinden*, or progressively *vulba*=*vulva*; *klimben*=*klimmen*, the connection of these changes with accelerated articulation is proved by the very fact that all these words change very readily from the first to the second form when we articulate faster. All the phenomena of contraction, assimilation, dissimilation, all sound-induction can be readily explained as results of accelerated speech. The tendency of sounds to attract or repel increases with the rate of speech and is now vastly greater than in the slower, majestic pronunciation of the older language, evident from the length and full sound of the older words. Elision, contraction, and discarding of prefixes and suffixes, by which forms are much curtailed, cannot have had any cause other than the greater celerity of articulation. The

fact that assimilation and contact-change are in the modern period mainly regressive, again appears as the result of the more rapid flow of speech, attending higher intelligence, causing a forward-bound movement of ideas, which is reflected in the regressive influence of a sound upon the preceding sound, by anticipation. In the slower speech of the older period, as also in the language of children, progressive assimilation is found to predominate.

At all events we must learn to regard every sound and every word as being under the influence of a great variety of assimilating forces. Thus in the series: *Dach*, *Sache*, *poche*, *suche*, *Zeche*, *Sichel*, the *ch* is a different spirant in every case. The organs of articulation are, in every one of these words in a different position when the spirant comes to be sounded, owing to the differing quality of the preceding vowel which is determined by the consonant preceding it as well as by the vowel of the following syllable. (cf. Wundt)

Naturally the variability of sounds is increased by differences in the place of articulation, duration, intensity, and pitch of sound. A clear illustration of the effect of accent-shifting is found in those Franco-English words in which the accent has been thrown back as far as possible, reducing the quantity and quality of all following syllables: *ádmirable*, *éxecrable*, *ígnominy*, *ábsolutism*.

A few general observations on speech-tempo may be added, in no strict order of arrangement. While in accordance with the law of mutation changes crop out suddenly and grow rapidly, a point of stand-still is naturally reached, even reversions are not excluded. The English of America shows signs of a return from the terseness of English accent to fuller and heavier pronunciation, e. g., *librāry*, *hōtēl*, *bēfore*, *milk-mān*, etc. The rise of round-about expressions, in place of forgotten concise English idioms is a similar phenomenon.

At any period of history, a nation which is in the lead intellectually, is very apt to exhibit the effects of speech-tempo at the most advanced point. So, at the beginning of the modern period, English and French had gone considerably farther in the process of reduction, and were far more concise in style than German, whose progress was retarded. Wundt

points out that such bi-lingual men as Leibniz and Frederick the Great, must have thought and spoken faster in French than in German.

Differences in the rate of speech can be observed between young and old persons, between the old and young generations; between persons of higher and lower culture, or at the various stages of an individual's intellectual development; between persons of equal culture but of different temperament, also between times of greater vigor and better spirits and periods of fatigue and depression, when pitch will also be correspondingly higher and lower. We speak with greater ease and precision on topics with which we are conversant, than we do when we have to think hard to find our way through a question. It is hardly necessary to say that the rate of speech is by no means always a certain index of intelligence, as shallow people are often amazingly voluble and vice versa.

The known conservatism of language acts as a check on change. Perhaps our age of universal printed literature will tend to arrest language relatively longer at its present stage than ever before. A fully correct idea of the present state of phonetics cannot be derived from our present orthography, but only from exact phonetic transcriptions or records.

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